

***What Is Claimed Is:***

1. An isolated nucleic acid molecule consisting of a polynucleotide having a nucleotide sequence at least 90% identical to a sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide comprising amino acids from 31 to 110 in SEQ ID NO:2 (Figure 1A);
- (b) a nucleotide sequence encoding a polypeptide comprising amino acids from 31 to 163 in SEQ ID NO:2 (Figure 1A);
- (c) a nucleotide sequence encoding a polypeptide comprising amino acids from 31 to 165 in SEQ ID NO:2; and
- (d) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), or (c);  
and optionally, a heterologous polynucleotide sequence.

2. The nucleic acid molecule of claim 1, wherein the polynucleotide has nucleotide sequence (a).

3. The nucleic acid molecule of claim 1, wherein the polynucleotide sequence is at least 95% identical to sequence (a).

4. The nucleic acid molecule of claim 1, wherein the polynucleotide encodes a polypeptide consisting of amino acids from 31 to 110 in SEQ ID NO:2 (Figure 1A).

5. The nucleic acid molecule of claim 1, wherein the polynucleotide has nucleotide sequence (b).

6. The nucleic acid molecule of claim 1, wherein the polynucleotide sequence is at least 95% identical to sequence (b).

7. The nucleic acid molecule of claim 1, wherein the polynucleotide encodes a polypeptide consisting of amino acids from 31 to 163 in SEQ ID NO:2 (Figure 1A).

8. The nucleic acid molecule of claim 1, wherein the polynucleotide has nucleotide sequence (c).
9. The nucleic acid molecule of claim 1, wherein the polynucleotide sequence is at least 95% identical to sequence (c).
10. The nucleic acid molecule of claim 1, wherein the polynucleotide encodes a polypeptide consisting of amino acids from 31 to 165 in SEQ ID NO:2 (Figure 1A).
11. The nucleic acid molecule of claim 1, wherein the polynucleotide has nucleotide sequence (d).
12. The nucleic acid molecule of claim 1, wherein the polynucleotide sequence is at least 95% identical to sequence (d).
13. The nucleic acid molecule of claim 1, wherein the polynucleotide has the nucleotide sequence of the complement of a polynucleotide that encodes a polypeptide consisting of amino acids from 31 to 110 in SEQ ID NO:2 (Figure 1A).
14. The nucleic acid molecule of claim 1, wherein the polynucleotide has the nucleotide sequence of the complement of a polynucleotide that encodes a polypeptide consisting of amino acids from 31 to 163 in SEQ ID NO:2 (Figure 1A).
15. The nucleic acid molecule of claim 1, wherein the polynucleotide has the nucleotide sequence of the complement of a polynucleotide that encodes a polypeptide consisting of amino acids from 31 to 165 in SEQ ID NO:2 (Figure 1A).
16. The nucleic acid molecule of claim 1, wherein the heterologous sequence encodes a polypeptide.
17. A method for making a recombinant vector comprising inserting the isolated nucleic acid molecule of claim 1 into a vector.

18. A recombinant vector produced by the method of claim 17.
19. A method of making a recombinant host cell comprising introducing the recombinant vector of claim 18 into a host cell.
20. A recombinant host cell produced by the method of claim 19.
21. A recombinant method for producing a polypeptide, comprising culturing the recombinant host cell of claim 20 under conditions such that the polypeptide encoded by the nucleic acid molecule of claim 1 is expressed, and recovering said polypeptide.
22. An isolated polypeptide having an amino acid sequence at least 90% identical to a sequence selected from the group consisting of:
- (a) amino acids from 31 to 110 in SEQ ID NO:2 (Figure 1A);
  - (b) amino acids from 31 to 163 in SEQ ID NO:2 (Figure 1A); and
  - (c) amino acids from 31 to 165 in SEQ ID NO:2;
- and optionally, a heterologous polypeptide sequence.
23. An isolated antibody that binds specifically to the polypeptide of claim 22.
24. An isolated antibody that binds specifically to a polypeptide consisting of amino acid residues selected from the group consisting of:
- (a) amino acids 5 to 15 in SEQ ID NO:2;
  - (b) amino acids 28 to 40 in SEQ ID NO:2;
  - (c) amino acids 50 to 64 in SEQ ID NO:2;
  - (d) amino acids 70 to 85 in SEQ ID NO:2;
  - (e) amino acids 100 to 112 in SEQ ID NO:2;
  - (f) amino acids 115 to 134 in SEQ ID NO:2;
  - (g) amino acids 136 to 150 in SEQ ID NO:2;
  - (h) amino acids 186 to 216 in SEQ ID NO:2;
  - (i) amino acids 220 to 232 in SEQ ID NO:2;
  - (j) amino acids 236 to 250 in SEQ ID NO:2;
  - (k) amino acids 250 to 260 in SEQ ID NO:2; and

- (l) amino acids 280 to 295 in SEQ ID NO:2.

25. A method of treating an immunodeficiency or condition associated with an immunodeficiency, comprising administering an effective amount of the polypeptide of claim 22, to a patient in need thereof; wherein said immunodeficiency is selected from the group consisting of:

- (a) common variable immunodeficiency (CVID);
- (b) acquired immunodeficiency syndrome (AIDS);
- (c) severe combined immunodeficiency (SCID);
- (d) selective IgA deficiency;
- (e) hypogammaglobulinemia; and
- (f) Wiskott-Aldrich syndrome.

26. A method of treating an immunodeficiency or condition associated with an immunodeficiency, comprising administering an effective amount of the the antibody of claim 23 to a patient in need thereof; wherein said immunodeficiency is selected from the group consisting of:

- (a) common variable immunodeficiency (CVID);
- (b) acquired immunodeficiency syndrome (AIDS);
- (c) severe combined immunodeficiency (SCID);
- (d) selective IgA deficiency;
- (e) hypogammaglobulinemia; and
- (f) Wiskott-Aldrich syndrome.

27. A method of diagnosing an immunodeficiency or condition associated with an immunodeficiency, comprising contacting the polypeptide of claim 22 with cells or bodily fluids from an individual, and assaying for binding to said polypeptide wherein said immunodeficiency is a selected from the group consisting of:

- (a) common variable immunodeficiency (CVID);
- (b) acquired immunodeficiency syndrome (AIDS);
- (c) severe combined immunodeficiency (SCID);
- (d) selective IgA deficiency;

- (e) hypogammaglobulinemia; and
- (f) Wiskott-Aldrich syndrome.

28. A method of diagnosing an immunodeficiency or condition associated with an immunodeficiency, comprising contacting the antibody of claim 23 with cells or bodily fluids from an individual, and assaying for binding to said antibody; wherein said immunodeficiency is a selected from the group consisting of:

- (a) common variable immunodeficiency (CVID);
- (b) acquired immunodeficiency syndrome (AIDS);
- (c) severe combined immunodeficiency (SCID);
- (d) selective IgA deficiency;
- (e) hypogammaglobulinemia; and
- (f) Wiskott-Aldrich syndrome.

29. A method of treating an autoimmune disease or condition associated with an autoimmune disease, comprising administering an effective amount of the polypeptide of claim 22, to a patient in need thereof; wherein said autoimmune disease is selected from the group consisting of:

- (a) rheumatoid arthritis;
- (b) systemic lupus erythematosus;
- (c) multiple sclerosis;
- (d) Sjogren's syndrome;
- (e) IgA nephropathy;
- (f) glomerulonephritis;
- (g) diabetes mellitus; and
- (h) myasthenia gravis.

30. A method of diagnosing an autoimmune disease or condition associated with an autoimmune disease, comprising contacting the polypeptide of claim 22 with cells or bodily fluids from an individual, and assaying for binding to said polypeptide; wherein said autoimmune disease is selected from the group consisting of:

- (a) rheumatoid arthritis;

- (b) systemic lupus erythmatosus;
- (c) multiple sclerosis;
- (d) Sjogren's syndrome;
- (e) IgA nephropathy;
- (f) glomerulonephritis;
- (g) diabetes mellitus; and
- (h) myasthenia gravis.

31. A method of treating an autoimmune disease or condition associated with an autoimmune disease comprising, administering an effective amount of the antibody of claim 23, to a patient in need thereof; wherein said autoimmune disease is selected from the group consisting of:

- (a) rheumatoid arthritis;
- (b) systemic lupus erythmatosus;
- (c) multiple sclerosis;
- (d) Sjogren's syndrome;
- (e) IgA nephropathy;
- (f) glomerulonephritis;
- (g) diabetes mellitus; and
- (h) myasthenia gravis.

32. A method of diagnosing an autoimmune disease or condition associated with an autoimmune disease, comprising contacting the antibody of claim 23 with cells or bodily fluids from an individual, and assaying for binding to said antibody, wherein said autoimmune disease is selected from the group consisting of:

- (a) rheumatoid arthritis;
- (b) systemic lupus erythmatosus;
- (c) multiple sclerosis;
- (d) Sjogren's syndrome;
- (e) IgA nephropathy;
- (f) glomerulonephritis;
- (g) diabetes mellitus; and

(h) myasthenia gravis.

33. A method of increasing B cell proliferation, comprising administering an effective amount of the antibody of claim 23, to a patient in need thereof.

34. A method of increasing immunoglobulin production, comprising administering an effective amount of the antibody of claim 23, to a patient in need thereof.

35. A method of inhibiting B cell proliferation, comprising administering an effective amount of the polypeptide of claim 22 to a patient in need thereof.

36. A method of inhibiting B cell proliferation, comprising administering an effective amount of the antibody of claim 23 to a patient in need thereof.

37. A method of inhibiting immunoglobulin production, comprising administering an effective amount of the polypeptide of claim 22 to a patient in need thereof.

38. A method of inhibiting immunoglobulin production, comprising administering an effective amount of the antibody of claim 23, to a patient in need thereof.

39. A method of killing a cell that expresses TR17 polypeptide on its cell surface, comprising contacting said cell with an antibody or portion thereof that specifically binds a polypeptide consisting of amino acid residues 1-293 of SEQ ID NO:2; wherein said antibody or portion thereof is conjugated to a toxin.

40. The method of claim 39 performed *in vitro*.

41. The method of claim 39 performed *in vivo*.

42. The method of claim 39 wherein said antibody or portion thereof specifically binds to a polypeptide consisting of amino acid residues 1-165 of SEQ ID NO:2.

43. The method of claim 39 wherein said antibody or portion thereof specifically binds to a polypeptide consisting of amino acid residues 31-165 of SEQ ID NO:2.

44. The method of claim 39 wherein said antibody or portion thereof specifically binds to a polypeptide consisting of amino acid residues 33-104 of SEQ ID NO:2.

45. The method of claim 39 wherein said antibody or portion thereof specifically binds to a polypeptide consisting of amino acid residues 33-66 of SEQ ID NO:2.

46. The method of claim 39 wherein said antibody or portion thereof specifically binds to a polypeptide consisting of amino acid residues 70-104 of SEQ ID NO:2.

47. The method of claim 39 wherein said antibody or portion thereof specifically binds to a polypeptide consisting of amino acid residues 31-110 of SEQ ID NO:2.

48. The method of claim 39 wherein the antibody or portion thereof is a monoclonal antibody.

49. The method of claim 39 wherein the antibody or portion thereof is a polyclonal antibody.

50. The method of claim 39 wherein the antibody or portion thereof is a chimeric antibody.

51. The method of claim 39 wherein the antibody or portion thereof is a humanized antibody.



52. The method of claim 39 wherein the antibody or portion thereof is a human antibody.

53. The method of claim 39 wherein the antibody or portion thereof is a single chain antibody.

54. The method of claim 39 wherein the antibody or portion thereof is a Fab fragment.

55. The method of claim 39 wherein said toxin is a radioisotope.

56. The method of claim 55 wherein said radioisotope is selected from the group consisting of:

- (a)  $^{125}\text{I}$ ;
- (b)  $^{121}\text{I}$ ;
- (c)  $^{123}\text{I}$ ;
- (d)  $^{131}\text{I}$ ;
- (e)  $^{111}\text{In}$ ;
- (f)  $^{112}\text{In}$ ;
- (g)  $^{113\text{m}}\text{In}$ ;
- (h)  $^{115\text{m}}\text{In}$ ;
- (i)  $^{99}\text{Tc}$ , and
- (j)  $^{99\text{m}}\text{Tc}$ .

57. The antibody or portion thereof or portion thereof of claim 39 wherein the toxin is selected from the group consisting of:

- (a) an anti-metabolite;
- (b) an alkylating agent;
- (c) an antibiotic;
- (d) an anti-mitotic agent;
- (e) an anthracycline; and
- (f) an apoptotic agent.

58. The method of claim 39 wherein said cell is an immune system cell.
59. The method of claim 58 wherein said immune system cell is a lymphocyte.
60. The method of claim 59 wherein said lymphocyte is a B cell.
61. The method of claim 60 wherein said B cell is leukemic.
62. The method of claim 59 wherein said lymphocyte is a T cell.
63. The method of claim 62 wherein said T cell is leukemic.